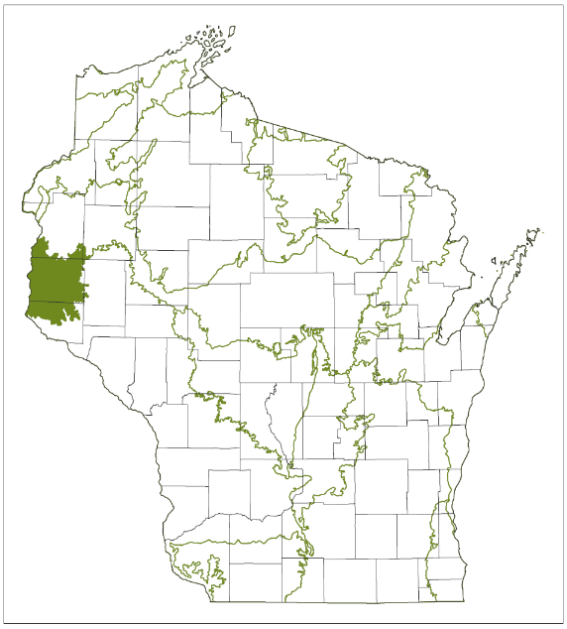
Western Prairie
Ecological Characteristics and Management Opportunities

Overview

This summary of the ecological characteristics and management opportunities of the Western Prairie is substantially taken from the Western Prairie chapter of the Ecological Landscapes of Wisconsin book (WDNR 2015).



The Western Prairie Ecological Landscape (WP EL) is located on the western edge of the state and includes Pierce, St. Croix and portions of Polk counties. It encompasses 1,090 square miles (697, 633 acres) represents 1.9% of Wisconsin's total area.

Bedrock that underlies the surface of the Western Prairie Ecological Landscape was deposited in the Paleozoic Era and is predominantly sandstone and dolomite. The entire landscape was entirely glaciated. Major formations are till plains, end moraines, and outwash plains. The dominant soil is well-drained and loamy with a silt loam surface.

Water features in the WP EL include the lower St. Croix, Kinnickinnic, Apple and Willow Rivers. The Kinnickinnic River above River Falls is a designated Outstanding Resource Water and is known for some of the highest naturally reproducing trout per mile numbers in the United States. There are 58 named lakes and 72 unnamed lakes. Several dams exist within this landscape with three of those on the Willow River. The Little Falls dam at Willow River State Park in the is in the process of being rebuilt.

Historically, vegetation in the WP EL was a mixture of different forested and open communities with the largest percentage of prairie and brush habitat of all the ecological landscapes in the state. Changes to the landscape have occurred over time and agricultural lands have replaced the prairies, brush, grasslands in many areas. Almost half the current vegetation in the landscape is agricultural crops and another third of the area is nonnative grassland with smaller areas of open water, open water, open wetlands, and urban areas. Prairie remnants are very rare and occur mostly on steep west or southwest facing bluffs, in roadsides, cemeteries and utility corridors. Large forested blocks are generally scarce, but found in the river corridors. The major

forest types are maple-basswood and oak-hickory with lesser amounts of lowland hardwoods.

Outstanding Ecological Opportunities

The WP EL offers the following outstanding ecological management opportunities:

Extensive Forests- Most of the native forests in this ecological landscape are deciduous. Oaks dominate the drier sites; maples, ashes, and basswood are found in the more mesic sites. Bottomland hardwoods are found in the lowland sites. Large blocks of forest are scarce or absent but an extensive forested corridor is present along the St. Croix River. These forest corridors play a significant role in maintaining high water quality and viable populations of many native plants and animals.

Savannas- Oak Openings were formerly common in the Western Prairie (over 10% cover). The few remnants that are present today occur mostly on the drier, steeper sites which have not been converted for agricultural uses. There is restoration and management potential in the landscape for increasing oak opening and savanna areas.

Prairie- Prairies were historically extensive in the interior of the Western Prairie Ecological Landscape and also occurred at scattered locations elsewhere, such as on south- or west-facing slopes on bluffs above river valleys or rocky knolls. A few stands of wet prairie have been identified, and several of these are now being managed to enhance and restore their composition and structure. Remnants of the mesic tallgrass prairies that formerly covered much of this ecological landscape's interior are now extremely scarce. Almost all of these mesic prairies have been lost to cropland conversion with a few remnants along road rights-of-way and in old cemeteries. The protection and management of surrogate grasslands now offer the best opportunity to maintain some of the declining grassland animals such as birds and some invertebrates.

Aquatic Communities- The lower St. Croix River is among the biologically richest rivers in Wisconsin and has exceptionally high values for rare fish and mussels. Wetlands within the river floodplain include marshes, wet prairies and bottomland hardwoods and used heavily by migratory and resident birds. Recreational use and development pressure on lands adjacent to the river are extremely high and are increasing. Other significant rivers include the Apple, Kinnickinnic, and Willow which represent warmwater, coolwater and coldwater systems. Protection of these important aquatic habitats and adjacent areas are paramount to the continuation of aquatic biological diversity in this landscape.

Natural Communities

A natural community is an assemblage of interacting plants, animals, other organisms, and the physical environment in which they occur that is shaped primarily by natural processes, and may be repeated across a landscape where similar environmental conditions prevail. The properties in the WP EL plan offer opportunity to manage for the following 'major' or 'important' natural communities.

Natural Community Type	Opportunity
Coldwater streams	Major
Coolwater streams	Major
Emergent Marsh	Major
Floating-leaved Marsh	Major
Mesic Prairie	Major
Surrogate Grasslands	Major
Warmwater rivers	Major
Warmwater streams	Major
Bedrock Glade	Important
Dry Cliff	Important
Dry Prairie	Important
Dry-mesic Prairie	Important
Eastern Red-cedar Thicket	Important
Floodplain Forest	Important
Moist Cliff	Important
Oak Opening	Important
Oak Woodland	Important
Riverine Mud Flat	Important
Sand Prairie	Important
Southern Dry-mesic Forest	Important
Southern Mesic Forest	Important
Spring Pond, Lake--Spring	Important
Springs and Spring Runs (Hard)	Important
Springs and Spring Runs (Soft)	Important
Submergent Marsh	Important

Major: the natural community can be sustained in the EL, either because many significant occurrences of the natural community have been recorded in that landscape or major restoration activities are likely to be successful in maintaining the community's composition, structure, and ecological function over a long period of time.
Important: Although the natural community does not occur extensively or commonly in the EL, one to several occurrences are present and important opportunities may exist because the natural community may be restricted to just one or few Els within the state and should be considered for management there because of limited geographical distribution and lack of better opportunities elsewhere.

Significant Wildlife Resources

The WP provides a number of habitats for a variety of fauna, especially those using grasslands, various wetland habitats, and river systems. There are 26 rare plant occurrences in the landscape with six of those listed as Wisconsin Endangered, six are Wisconsin Threatened and 14 are Wisconsin Special Concern.

The WP is the only place in Wisconsin where it may be possible to maintain and manage wildlife associated with a prairie-pothole habitat complex at a large scale. The landscape also provides opportunities for a major grassland/wetland restoration project with the Western Prairie Habitat Restoration Area. This project area includes remnants of one of the largest prairies historically occurring in the state, along with a mix of prairie pothole ponds, lakes and marshes.

The St. Croix River is highly significant to aquatic organisms, including at least 26 rare species of fish, mussels and other invertebrates. Additionally, this forested river corridor is heavily used by migratory and resident birds. Other cool, cold and warm water streams such as the Apple, Kinnickinnic and Willow rivers support a trout and smallmouth bass fishery as well as rare species and ecological features.